ABSTRACT

The present invention discloses the identification and characterization of a novel mammalian pluripotent neural cell population. More particularly, the present invention relates to compositions and methods allowing the identification, monitoring, culture and differentiation of boundary cap cells and their progeny. The invention also relates to methods of screening compounds that alter the growth, migration and/or differentiation of these cells, as well as to methods of producing functional cells in vitro, ex vivo or in vivo using said pluripotent cells. The invention can be used to detect, diagnose, monitor and/or treat various pathological conditions in mammalian subjects, including nervous diseases such as neurodegenerative condition, demyelination, pain, etc. The invention can be used for tissue engineering, to produce various differentiated cell types by differentiation of said pluripotent cells under appropriate conditions. The invention may also be used to identify genes or proteins that contribute to the nervous system function and/or integrity.